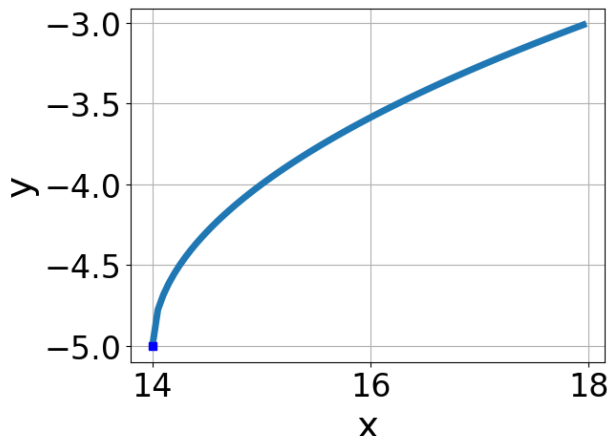1. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt{x + 14} - 5$

B. $f(x) = -\sqrt{x - 14} - 5$

C. $f(x) = \sqrt{x - 14} - 5$

D. $f(x) = \sqrt{x + 14} - 5$

E. None of the above

---

2. What is the domain of the function below?

$$f(x) = \sqrt[8]{9x + 4}$$

A. $(-\infty, \infty)$

B. $(-\infty, a]$, where $a \in [-7.25, -1.25]$

C. $(-\infty, a]$, where $a \in [-1.44, 3.56]$

D. $[a, \infty)$, where $a \in [-0.62, 0.41]$
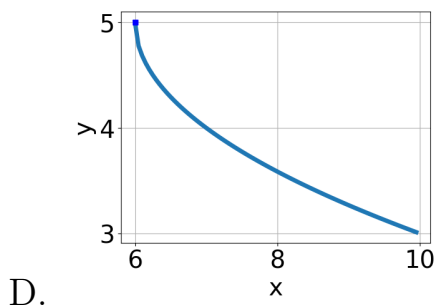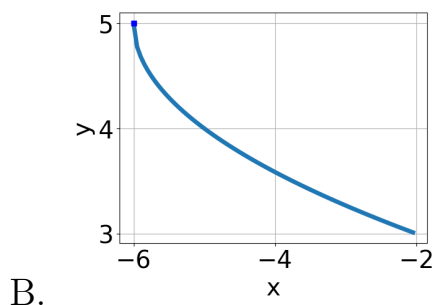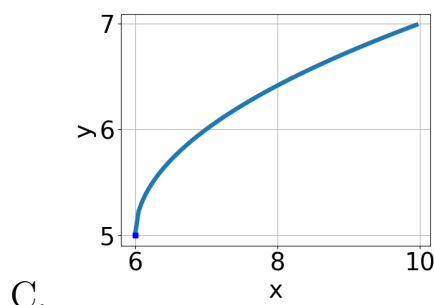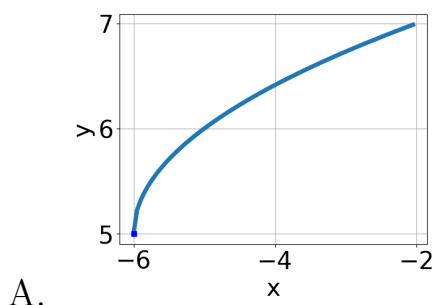
E. $[a, \infty)$, where $a \in [-3.38, -1.86]$

---

3. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{42x^2 + 81} - \sqrt{117x} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-1.58, -1.41]$ and $x_2 \in [-3.9, 1.3]$

C. $x \in [1.3, 1.65]$

D. $x_1 \in [1.16, 1.31]$ and $x_2 \in [0, 2.4]$

E. $x \in [1.16, 1.31]$

---

4. Choose the graph of the equation below.

$$f(x) = -\sqrt{x+6} + 5$$

A.

C.

B.

D.

E. None of the above.

---

5. What is the domain of the function below?

$$f(x) = \sqrt[5]{7x - 6}$$

A. The domain is $(-\infty, a]$, where $a \in [0.74, 1.13]$

B. The domain is $[a, \infty)$, where $a \in [0.58, 1.1]$

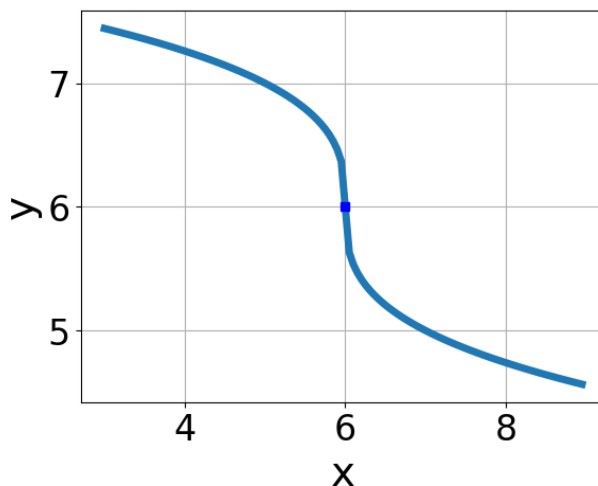C. The domain is $(-\infty, a]$, where $a \in [1.05, 1.29]$

D. The domain is $[a, \infty)$, where $a \in [1.06, 1.55]$

E. $(-\infty, \infty)$

---

6. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{8x + 3} - \sqrt{2x - 3} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-0.89, -0.14]$ and $x_2 \in [1.5, 5.5]$

C. $x \in [-0, 0.25]$

D. $x \in [-1.28, -0.55]$

E. $x_1 \in [-1.28, -0.55]$ and $x_2 \in [-6.38, 0.62]$

---

7. Choose the equation of the function graphed below.

A. $f(x) = \sqrt[3]{x + 6} + 6$

B. $f(x) = -\sqrt[3]{x - 6} + 6$

C. $f(x) = \sqrt[3]{x - 6} + 6$

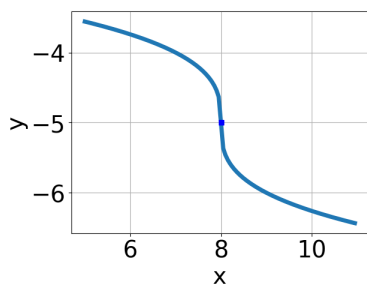D. $f(x) = -\sqrt[3]{x + 6} + 6$

E. None of the above

8. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
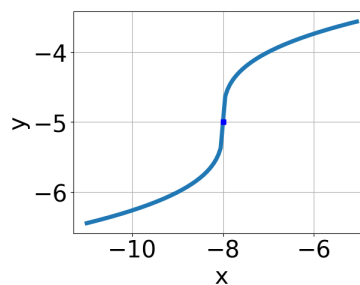
$$\sqrt{-72x^2 - 35} - \sqrt{103x} = 0$$

A. $x \in [-0.58, -0.54]$

B. $x \in [-2.23, -0.79]$

C. $x_1 \in [0.48, 0.89]$ and $x_2 \in [-0.44, 8.56]$

D. $x_1 \in [-2.23, -0.79]$ and $x_2 \in [-3.56, 0.44]$

E. All solutions lead to invalid or complex values in the equation.
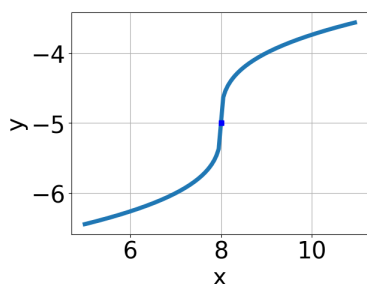
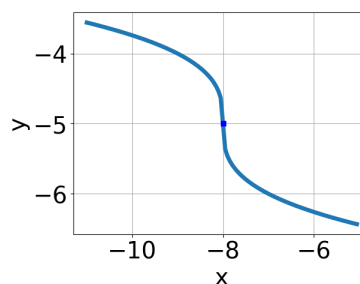9. Choose the graph of the equation below.
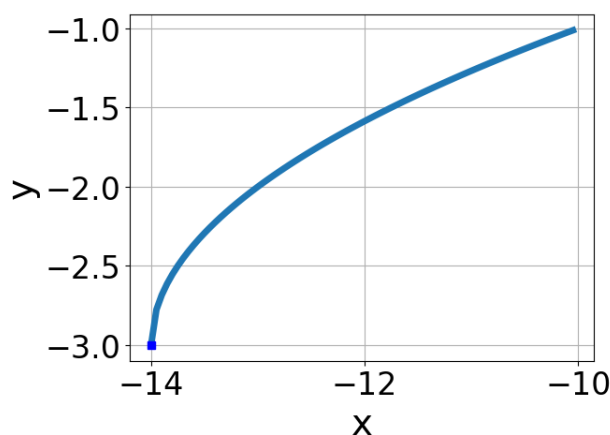
$$f(x) = -\sqrt[3]{x - 8} - 5$$

A.

B.

C.

D.

E. None of the above.

10. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-4x + 5} - \sqrt{8x - 3} = 0$$

A. $x \in [0.03, 0.27]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [0.65, 0.93]$ and $x_2 \in [-0.75, 4.25]$

D. $x_1 \in [0.26, 0.42]$ and $x_2 \in [-0.75, 4.25]$

E. $x \in [0.65, 0.93]$

---

11. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x + 14} - 3$

B. $f(x) = \sqrt[3]{x - 14} - 3$

C. $f(x) = \sqrt[3]{x + 14} - 3$

D. $f(x) = -\sqrt[3]{x - 14} - 3$

E. None of the above

---

12. What is the domain of the function below?

$$f(x) = \sqrt[5]{5x - 9}$$

A. The domain is $[a, \infty)$, where $a \in [1.8, 5.8]$

B. $(-\infty, \infty)$

C. The domain is $(-\infty, a]$, where $a \in [1.21, 3.04]$

D. The domain is $(-\infty, a]$, where $a \in [-0.45, 1.48]$

E. The domain is $[a, \infty)$, where $a \in [-0.44, 1.56]$

---

13. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-54x^2 - 12} - \sqrt{-66x} = 0$$

A. $x \in [0.43, 1.19]$

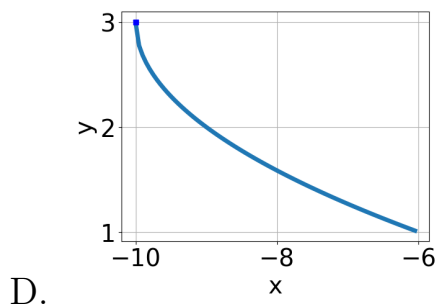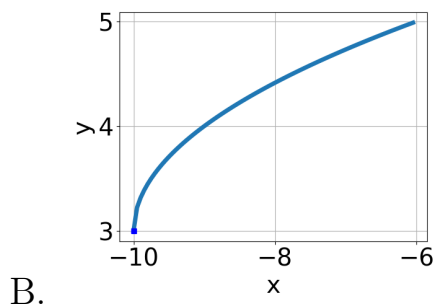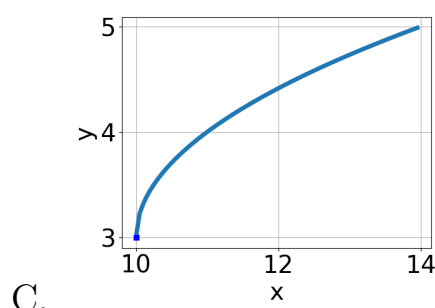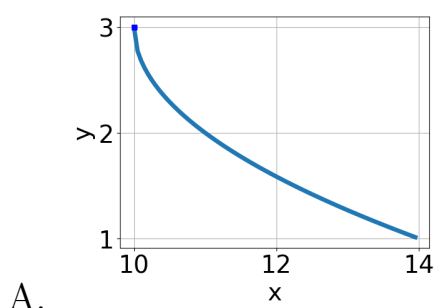B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-1.42, -0.22]$ and $x_2 \in [-7, -0]$

D. $x \in [-0.1, 0.86]$

E. $x_1 \in [-0.1, 0.86]$ and $x_2 \in [1, 3]$

---

14. Choose the graph of the equation below.

$$f(x) = \sqrt{x - 10} + 3$$

A.

C.

B.

D.

E. None of the above.

15. What is the domain of the function below?
$$f(x) = \sqrt[3]{8x + 6}$$

   A. The domain is $[a, \infty)$, where $a \in [-0.88, -0.52]$

   B. $(-\infty, \infty)$

   C. The domain is $(-\infty, a]$, where $a \in [-1.02, 0.07]$

   D. The domain is $(-\infty, a]$, where $a \in [-1.55, -1.18]$

   E. The domain is $[a, \infty)$, where $a \in [-1.5, -1.13]$

16. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
$$\sqrt{9x - 7} - \sqrt{2x - 4} = 0$$

   A. All solutions lead to invalid or complex values in the equation.

   B. $x_1 \in [0.24, 0.69]$ and $x_2 \in [-0.9, 1.1]$

   C. $x_1 \in [0.46, 1.06]$ and $x_2 \in [1.4, 3.6]$

   D. $x \in [0.24, 0.69]$

   E. $x \in [1.33, 1.59]$

17. Choose the equation of the function graphed below.
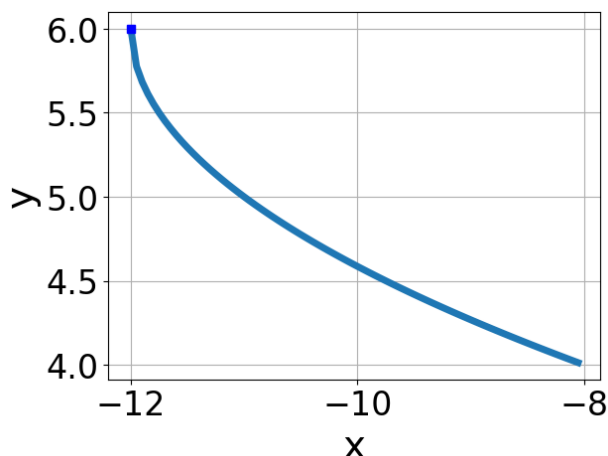
A. $f(x) = -\sqrt[3]{x + 12} + 6$

B. $f(x) = \sqrt[3]{x - 12} + 6$

C. $f(x) = -\sqrt[3]{x - 12} + 6$

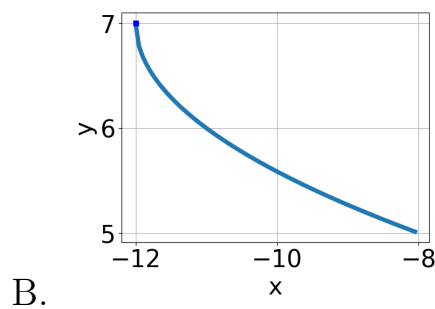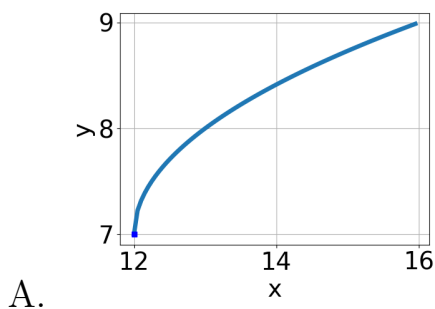D. $f(x) = \sqrt[3]{x + 12} + 6$

E. None of the above

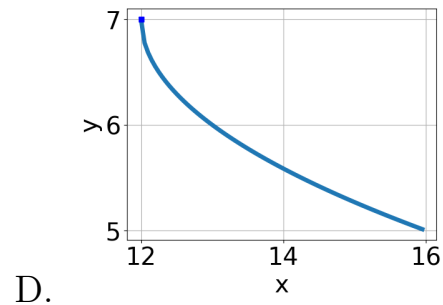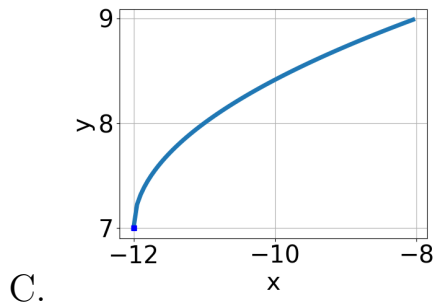18. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{63x^2 + 10} - \sqrt{59x} = 0$$

A. $x_1 \in [0.13, 0.45]$ and $x_2 \in [0.45, 1.13]$

B. $x_1 \in [-1.01, -0.69]$ and $x_2 \in [-0.77, -0.07]$

C. $x \in [0.64, 1.16]$

D. $x \in [0.13, 0.45]$

E. All solutions lead to invalid or complex values in the equation.

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19. Choose the graph of the equation below.

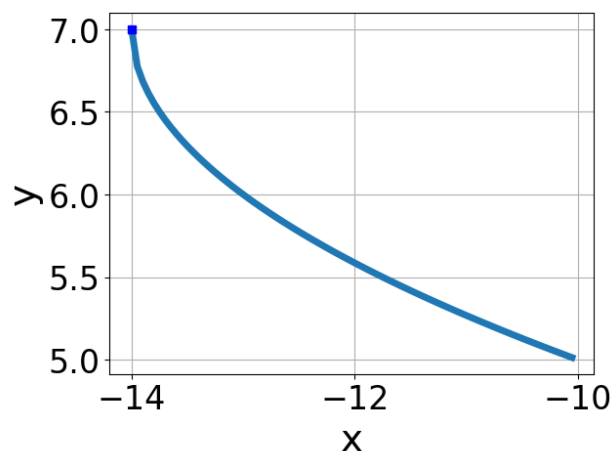$$f(x) = -\sqrt{x - 12} + 7$$

A.

B.

C.

D.

E. None of the above.

20. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-9x - 4} - \sqrt{-3x - 5} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [-0.05, 0.3]$

C. $x_1 \in [-1.93, -1.61]$ and $x_2 \in [-1.59, -0.14]$

D. $x_1 \in [-0.71, -0.36]$ and $x_2 \in [0.11, 0.78]$

E. $x \in [-1.61, -1.25]$

21. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x + 14} + 7$

B. $f(x) = \sqrt[3]{x + 14} + 7$

C. $f(x) = \sqrt[3]{x - 14} + 7$

D. $f(x) = -\sqrt[3]{x - 14} + 7$

E. None of the above

---

22. What is the domain of the function below?

$$f(x) = \sqrt[8]{-7x + 3}$$

A. $(-\infty, \infty)$

B. $(-\infty, a]$, where $a \in [0, 2]$

C. $[a, \infty)$, where $a \in [1.4, 5.4]$

D. $[a, \infty)$, where $a \in [-1.9, 0.8]$

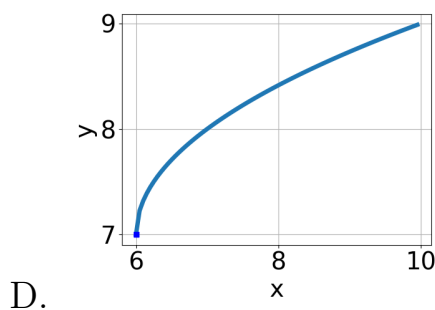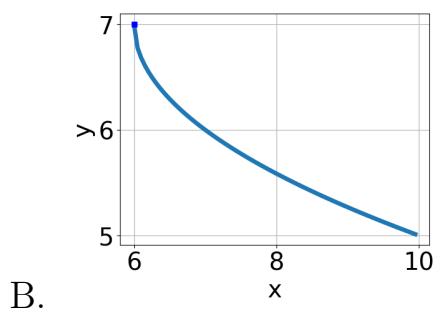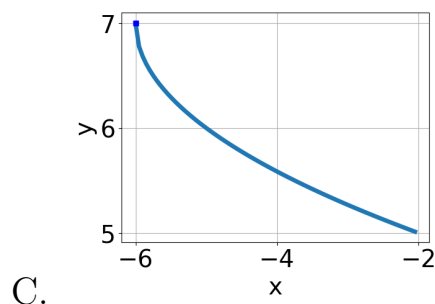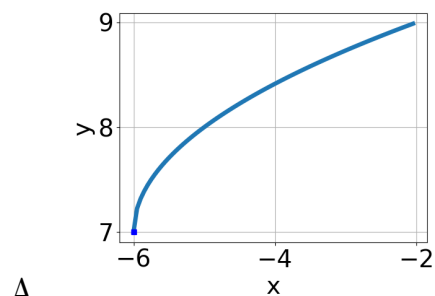E. $(-\infty, a]$, where $a \in [1.8, 4.7]$

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23. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{35x^2 + 42} - \sqrt{-79x} = 0$$

A. $x_1 \in [0.72, 1.71]$ and $x_2 \in [0.9, 3.5]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-1.61, -0.88]$

D. $x \in [-0.88, -0.84]$

E. $x_1 \in [-1.61, -0.88]$ and $x_2 \in [-1.2, 0.3]$

---

24. Choose the graph of the equation below.

$$f(x) = -\sqrt{x - 6} + 7$$

A.

C.

B.

D.

E. None of the above.

---

25. What is the domain of the function below?

$$f(x) = \sqrt[4]{6x - 4}$$

A. $[a, \infty)$, where $a \in [0.51, 1.35]$

B. $[a, \infty)$, where $a \in [1.46, 1.7]$

C. $(-\infty, a]$, where $a \in [1.3, 4.3]$

D. $(-\infty, \infty)$
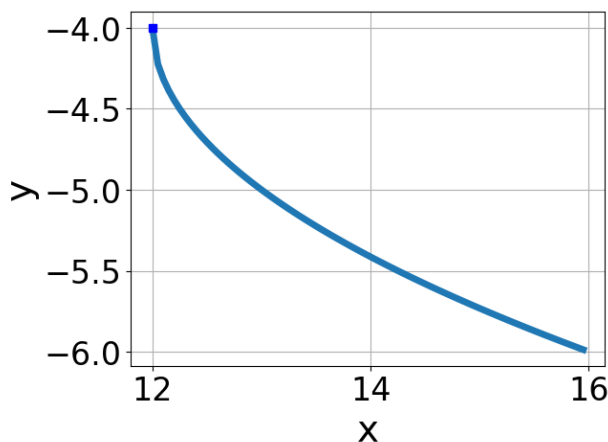
E. $(-\infty, a]$, where $a \in [0.5, 1]$

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26. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-6x - 5} - \sqrt{2x + 5} = 0$$

A. $x_1 \in [-2.6, -1.5]$ and $x_2 \in [-5.83, 1.17]$

B. $x \in [-0.7, 1.3]$

C. $x \in [-2.1, -0.4]$

D. $x_1 \in [-2.1, -0.4]$ and $x_2 \in [-5.83, 1.17]$

E. All solutions lead to invalid or complex values in the equation.

---

27. Choose the equation of the function graphed below.

A. $f(x) = \sqrt{x + 12} - 4$

B. $f(x) = -\sqrt{x + 12} - 4$

C. $f(x) = \sqrt{x - 12} - 4$

D. $f(x) = -\sqrt{x - 12} - 4$

E. None of the above

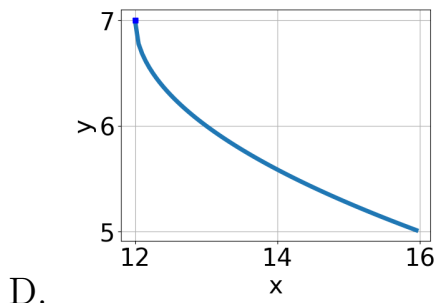28. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
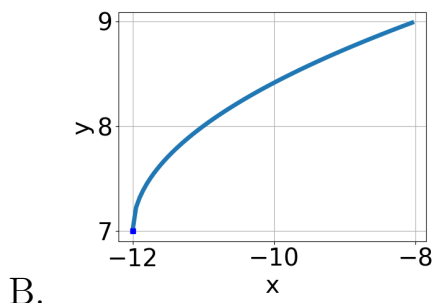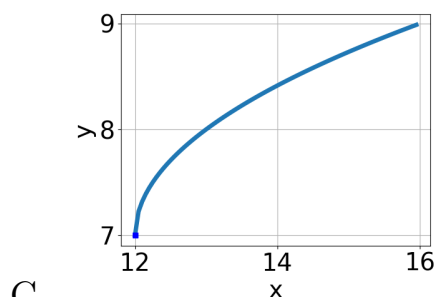
$$\sqrt{-9x^2 - 24} - \sqrt{33x} = 0$$

A. $x_1 \in [2.58, 3.03]$ and $x_2 \in [-0.1, 4.2]$

B. $x \in [-2.44, -0.68]$

C. $x \in [-3.14, -2.26]$

D. $x_1 \in [-3.14, -2.26]$ and $x_2 \in [-1.4, 0.9]$

E. All solutions lead to invalid or complex values in the equation.

29. Choose the graph of the equation below.

$$f(x) = -\sqrt{x - 12} + 7$$

A.

C.

B.

D.

E. None of the above.

30. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
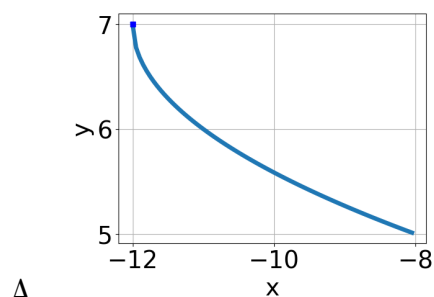
$$\sqrt{4x - 6} - \sqrt{7x - 4} = 0$$

A. $x_1 \in [-1.08, 0.01]$ and $x_2 \in [1.5, 3.5]$

B. $x \in [-1.08, 0.01]$

C. $x \in [-3.64, -3.28]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-0.51, 0.84]$ and $x_2 \in [1.5, 3.5]$